DOCUMENT RESUME

ED 230 634 UD 022 779

TITLE	Bronx Multidiscipline Special Education Bilingual Program. E.S.E.A. Title VII Annual Evaluation Report, 1981-82.
INSTITUTION	New York City Board of Education, Brooklyn, N.Y. Office of Educational Evaluation.
PUB DATE	82
NOTE	28p.
PUB TYPE	Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Achievement Gains; *Bilingual Education Programs; *Disabilities; Elementary Secondary Education; English Instruction; *Hispanic Americans; Individualized Instruction; Interdisciplinary Approach; Limited English Speaking; *Program Effectiveness; Reading Instruction; Science Instruction; Social Studies; Special Education; Special Education Teachers; Staff Development
IDENTIFIERS	New York City Board of Education

ABSTRACT

The Bronx (New York City) Multidiscipline Special Education Bilingual Program was designed to supplement the basic educational program for handicapped students with limited English proficiency in the Bronx Special Education Region. In 1980-81, the program served 132 Hispanic handicapped students in nine public and two private schools. Program services included direct individualized instruction, resource assistance, staff development, and the provision of opportunities for parent training and involvement. This report presents findings from the third cycle of evaluation of the program. The results indicate that: (1) participants demonstrated achievement gains in mathematics, although the criterion objective (measured in percentage of mastery of mathematics concepts) was not attained; (2) program objectives for English language proficiency, social studies, science, and English reading were met; (3) teachers had favorable attitudes toward the program and demonstrated mastery of training workshop concepts; and (4) parents who participated in training workshops successfully mastered the concepts taught. Recommendations for continued program success are presented. (MJL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED230634

ANNUAL EVALUATION REPORT
E.S.E.A. TITLE VII
5001-62-27603

BRONX MULTIDISCIPLINE SPECIAL EDUCATION BILINGUAL PROGRAM

1981-82

Division of Special Education
Alan Gartner, Executive Director

D.S.E. Reimbursable Programs
Allison Tupper

Octavia LeGrand
Project Coordinator

Prepared by:
O.E.E./Special Education Evaluation Unit
Robert Tobias, Evaluation Manager
Christine Halfar, Evaluation Associate
Jerome Margolis, Evaluation Specialist
Deborah Allen, Consultant

New York City Public Schools
Office of Educational Evaluation
Richard Guttenberg, Director

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
T.K. Minter

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

UD 022 779

A SUMMARY OF THE EVALUATION OF THE 1981-82 E.S.E.A. TITLE VII BRONX MULTIDISCIPLINE SPECIAL EDUCATION BILINGUAL PROGRAM

This program supplemented the basic educational services provided by the Division of Special Education for Hispanic handicapped students with limited English proficiency (L.E.P.) in the Bronx. Program services included direct individualized instruction, resource assistance, staff development, and parent training and involvement. During the 1981-82 school year, 132 students were served in nine public schools (seven elementary and two intermediate) and two private schools.

The analyses of data from pupil achievement measures, teacher attitude and observation scales, and staff interviews and classroom observations indicated that, as reported for the two previous cycles, the Bronx Multidiscipline Special Education Bilingual Program continued to provide an effective and comprehensive system of educational services that developed the instructional skills of the staff and the academic skills of the students.

Pupil achievement data indicated that most student program objectives were attained. The proposed criteria were met in oral-English proficiency, social studies, science, and English reading. Although the proposed objective was not attained in mathematics, students showed considerable achievement. In addition, all classroom teachers showed a positive attitude toward program services, particularly teacher training, and demonstrated proficiency in the skills and concepts focussed upon in teacher-training workshops. Although parent attendance at workshops remained low, it represented a substantial increase over previous cycles. Once again, extensive program-parent communication was maintained through home visits by the project coordinator, teachers, and family workers.

TABLE OF CONTENTS

		Page
I.	INTRODUCTION	1
II.	EVALUATION OF PROGRAM IMPLEMENTATION	3
	DESCRIPTION	3
	DIRECT PUPIL INSTRUCTION	4
	RESOURCE SERVICES	6
	STAFF DEVELOPMENT	7
	PARENT EDUCATION AND INVOLVEMENT	7
III.	EVALUATION OF THE ATTAINMENT OF PROGRAM OBJECTIVES	9
	ATTENDANCE	9
	OBJECTIVE 1. MASTERY OF MATHEMATICS SKILLS	9
	OBJECTIVE 2. IMPROVEMENT IN ORAL-ENGLISH PROFICIENCY	10
	OBJECTIVE 3. MASTERY OF SOCIAL STUDIES CONCEPTS	13
	OBJECTIVE 4. MASTERY OF SCIENCE CONCEPTS	13
	OBJECTIVE 5. GROWTH IN ENGLISH READING	17
	OBJECTIVE 6. ATTITUDE TOWARD THE PROGRAM	17
	OBJECTIVE 7. STAFF MASTERY OF WORKSHOP CONCEPTS	19
	OBJECTIVE 8/9 PARENT INVOLVEMENT	20
IV.	CONCLUSIONS AND RECOMMENDATIONS	22

LIST OF TABLES

Table		Page
Table 1	Frequency distribution of the percentage of mastery of mathematics objectives by program students	11
Table 2	Frequency distribution of the number of math skills mastered by program students	12
Table 3	Comparison of pre-test and post-test English language samples	14
Table 4	Frequency distribution of scores on project-developed social studies test	15
Table 5	Frequency distrubtion of scores on project-developed science test	16
Table 6	Frequency distribution of the number of reading skills mastered by program students	18

I. INTRODUCTION

This report presents the evaluation of the third and final annual cycle of the E.S.E.A. Title VII Bronx Multidiscipline Special Education Bilingual Program (hereafter referred to as the Bronx Multidiscipline Program). This program supplemented the basic educational services provided by the Division of Special Education for handicapped students with limited English proficiency (L.E.P.) in the Bronx. Program services included direct individualized instruction, resource assistance, staff development, and parent training and involvement.

Results of the evaluation from previous cycles indicated that the program provided an effective and comprehensive system of educational services that developed the instructional skills of classroom staff and academic skills of the students. Pupil achievement criteria were consistently met in the areas of oral-English proficiency, social studies, science, and English reading. Although the proposed mathematics objective was not attained, students showed considerable achievement. Participating staff were receptive to program services, particularly teacher training, and demonstrated proficiency in new skills and concepts presented in workshops. Especially noteworthy was the development of original curricula in reading and mathematics for bilingual exceptional students which represented an important contribution to the advancement of bilingual special education. Despite the staff's best efforts parent participation remained modest; however, communication was maintained through home visits and telephone calls.

This project was evaluated by the Office of Educational Evaluation (O.E.E.) through the collection and analysis of data from (1) pupil

achievement tests, (2) program records of parent participation and staff training, (3) teacher attitude and observation scales, and (4) interviews and observations by an O.E.E. field consultant concerning the level and quality of program implementation. The following chapters present the findings of the evaluation. Chapter II provides a description of the program and the evaluation of program implementation; Chapter III addresses the level of attainment of program objectives; and Chapter IV presents conclusions and recommendations.

II. EVALUATION OF PROGRAM IMPLEMENTATION

DESCRIPTION

The Bronx Multidiscipline Program was designed to supplement the basic educational program for L.E.P. students with a variety of handicaps in the Bronx Special Education Region. During the 1981-82 school year, the program served 132 students in nine public schools (seven elementary and two intermediate) and two private schools.

Approximately one-half of the students were educable mentally retarded and one-half were learning disabled; all were served in self-contained classes with an average register of 12 students. The students, who ranged in age from seven to 16 years with a mean of 11.5 and a mode of 11, were referred to the program by school-based support teams.

The program was administered by the regional coordinator of bilingual special education in the Bronx who served as program coordinator. Other staff included: two resource teachers who were responsible for the training of paraprofessionals and classroom teachers and parent involvement; four paraprofessionals who assisted the classroom teachers in the individualization of instruction and materials development; and two family assistants who served as liaisons between the students and their families and social, medical, and educational agencies. In addition to staff, the grant allocated funds for curriculum development and instructional materials for teacher and parent training.

The pupil-centered objectives of the program projected gains in oral-English proficiency, mathematics, science, social studies, and English reading. Other program objectives were to promote (1) the mastery of staff-development objectives by classroom teachers and

paraprofessionals, (2) the concern of parents in their children's education and development and (3) a favorable attitude toward the program by classroom teachers and paraprofessionals.

The following sections present the findings of interviews and observations made at five program sites by an O.E.E. field consultant to evaluate each of the four major program components: direct pupil instruction, resource services, staff development, and parent involvement.

DIRECT INSTRUCTION

Since the target population was heterogeneous in age and academic and linguistic proficiency, individualization of instruction was integral. One method practiced at several classroom sites was the Workshop Way, a comprehensive, integrated instructional system similar to the open classroom in which students work independently using available materials. This and other approaches such as conventional learning centers made it possible for the teacher or paraprofessional to assist those children requiring individual attention.

Observations indicated that in all cases instruction was individualized based on the assessment of each child's linguistic, cognitive, academic, and social competencies. The observed teachers maintained program-developed student-academic-profile sheets in addition to individual educational plans (I.E.P.s). I.E.P.s recorded student competencies in reading, cognition, math, and functional living skills and provided an indication of whether each item had been mastered in English and/or Spanish and the date of mastery. These checklists offered a quick

reference for the teacher to plan, organize, and monitor student progress.

All classroom teachers demonstrated excellent management skills as well as personal warmth and responsiveness. The lessons were motivating, well-paced, and executed in accordance with individual student needs. Disruptions by acting-out students were quickly managed in a manner that kept the learning atmosphere consistent and stable. The teachers employed a wide array of activities, materials, and instructional techniques designed to stimulate a variety of modalities. Teachers indicated that they spent the greatest amount of time on reading, language arts, and basic math. Most classes offered career development activities in addition to academic subjects. Most lessons were conducted in both Spanish and English depending on the students' linguistic abilities; Spanish-only experiences were primarily in the areas of speaking, listening, and writing.

Enrichment lessons focussing upon Hispanic culture promoted a positive bicultural, bilingual identity and self concept. These activities were effectively implemented with the aid of a talented bilingual para-professional who visited each classroom periodically for art enrichment activities. Two of the five teachers interviewed implemented comprehensive programs covering Caribbean geography, history, culture, cuisine, and folktales as well as discussions of migration and acculturation. All classes celebrated holidays reflecting Hispanic, black American, and American cultures including Puerto Rican Discovery Day, Dr. Martin Luther King's Birthday, Christmas, Pan American Month, and the Feast of the Three Kings.

The materials and resources provided by the project included various texts, program-developed curriculum materials, and equipment such as math computers and Bell and Howell Spelling Masters. All teachers interviewed were pleased with the selection and quantities of the materials provided.

Classroom staff stated that the staff-development workshops and on-site demonstrations and consultations had contributed substantially to their demonstrated instructional expertise. Close contact and regular communication between the project and classroom personnel appeared to bolster morale as well as professional skills.

RESOURCE SERVICES

As in previous cycles, a variety of resources were tapped for consultation, information, and materials including the State Education Department's Bureau of Bilingual Education, New York City Public Schools' Office of Bilingual Education, and local universities and hospitals. In addition, the program made extensive use of the varied services of the Bronx region of the Division of Special Education including supervisors, psychologists, social workers, paraprofessionals, and specialists such as adaptive-physical-education teachers.

An itinerant paraprofessional who was trained in art was a valuable resource to the program by involving students in highly-creative and motivating projects and the development of visual materials for classroom lessons.

Three trips were organized during the course of the year. Groups of about 100 students and parents visited the Ice Cave Mountain, the Catskills Game Farm, and the Mystic Seaport.

STAFF DEVELOPMENT

Staff training was principally provided by the project coordinator and resource specialists through workshops and on-site demonstration lessons. Training focused upon the individualization of instruction including the implementation of the program's curriculum through a diagnostic-prescriptive approach. Teachers interviewed found the training to be informative, realistic, and supportive.

As in previous cycles, the project coordinator monitored staff development closely through the formative assessment of class achievement. The progress of project classes and students in the mastery of reading and mathematics skills was followed through the aggregation of data from the criterion-referenced Prescriptive Reading Inventory (P.R.I.) and Diagnostic Mathematics Inventory (D.M.I.). Teachers of classes in which student progress was lagging received special attention and support.

The two in-service sessions were observed in which consultants from Fordham University discussed the cognitive mapping styles of bilingual children and the effects of bilingual education on students' cognitive processes. Both sessions were well-attended.

PARENT EDUCATION AND INVOLVEMENT

Parent involvement for awareness and training was promoted through monthly parent workshops, individual educational planning and teacher conferences, and home visits. Parents were also invited to accompany students on program-sponsored trips and a total of about 20 did so.

Parent workshops were organized around four major areas: cooking, including nutrition, consumer education, and hygiene; crafts, including home and holiday decorations; English as a second language, including survival English skills, the schools, and rights and duties as citizens; and sewing. At each workshop session, activities were presented in each area.

Following each workshop session, staff and parents met for a general discussion of topics of interest; often these focused on issues in child rearing. Where further assistance was indicated the staff made referrals to local social service and other agencies.

The project coordinator personally visited the parents of many students at home to discuss methods for assisting the academic and social development of their children. Family workers also made home visits and maintained close contact with the parents.

III. EVALUATION OF THE ATTAINMENT OF PROGRAM OBJECTIVES

The Bronx Multidiscipline Project was designed to attain nine objectives: five related to pupil achievement, two concerning staff attitudes and development, and two for parent participation. The following sections present the objectives of the program, the methods of evaluation, and the findings preceded by data on pupil attendance.

ATTENDANCE

Data were submitted on O.E.E. data-retrieval forms for 132 program students. Four of these students were frequently absent and five were discharged early. Thus, complete data were reported for 123 students (93.2 percent).

The mean number of days of program attendance was 149 (S.D. = 24) out of a total of 185 instructional days. The median was 150 days and the mean percentage attendance was 84 percent.

OBJECTIVE 1. MASTERY OF MATHEMATICS SKILLS

The mathematics objective of the Bronx Multidiscipline Program stated that by June, 1982, 80 percent of the participating students will have demonstrated mastery of 70 percent of the identified math objectives which they had not mastered in September, 1981. The objective was measured through ongoing administration of the Diagnostic Mathematics Inventory (D.M.I.).

Baseline data were gathered for program students on the D.M.I. during September, 1981. These data were used to diagnose each student's strengths and weaknesses in mathematics and to develop short-term

objectives to remediate the observed deficiencies. After individual instruction for each short-term objective, the students were posttested on the relevant items of the D.M.I. to ascertain mastery. These data were reported for analysis during June, 1982.

Table 1 presents the frequency distribution of the percentage of short-term math objectives mastered by the target students. The percentage of mastery ranged from a minimum of less than 49 percent for 10 students (8.1 percent of these for whom these data were reported) to over 90 percent for 43 students (35.0 percent). The multiple criterion for this objective was a percentage of mastery of at least 70 percent by 80 percent of the population. Inspection of Table 1 indicates that the mastery criterion was attained by 59.4 percent of the students.

Although the program did not attain the criterion for the mathematics objective (measured in percentage of mastery) the students demonstrated considerable achievement measured in the absolute number of D.M.I. objectives mastered. (See Table 2.) The total number of D.M.I. objectives mastered ranged from a minimum of zero to a maximum of six. More than 80 percent of the students mastered at least four objectives and over 93 percent mastered at least three. The mean was 4.2, the median 4.7, and the mode four.

OBJECTIVE 2. IMPROVEMENT IN ORAL-ENGLISH PROFICIENCY

An objective of the program was that by June, 1982, those students who were non-English dominant would show statistically significant improvement, at the .05 level, in oral proficiency in English. The objective was measured by a comparison of English-language samples taken during October, 1981 and June, 1982. The samples consisted of the

TABLE 1

Frequency Distribution of the Percentage of Mathematics Objectives Mastered by Program Students[a]

Percentage of Mastery[b]	Number of Students	Relative Percent	Cumulative Percent
90-99	43	35.0	35.0
80-89	9	7.3	42.3
70-79	21	17.1	59.4
60-69	17	13.8	73.2
50-59	23	18.7	91.9
40-49	10	8.1	100.0
	123		

[a]Measured by the Diagnostic Mathematics Inventory.

[b]The percentage of short-term mathematics objectives that were remediated and mastered.

[c]Approximately 59 percent of the students mastered a minimum of 70 percent of the math skills in which they were remediated; the criterion of 80 percent of the students was not attained.

TABLE 2

Frequency Distribution of the Number of Math Skills Mastered by Program Students[a]

Number of Skills Mastered	Number of Students	Relative Percent	Cumulative Percent
6	11	8.9	8.9
5	41	33.3	42.2
4	47	38.2	80.4
3	16	13.0	93.4
2	6	4.9	98.3
1	1	0.8	99.1
0	1	0.8	99.9[b]
	123		

[a]Measured by the Diagnostic Mathematics Inventory.

[b]Does not equal 100 percent due to rounding error.

- More than 80 percent of the students tested mastered at least four new mathematics skills
- Over 40 percent mastered five or more.

students' oral productions in response to the presentation of pictorial stimuli that related to the program's curriculum. Stimuli were presented individually until five sentences were produced. The average sentence length of these productions was scored in T units by a language-proficiency expert. The mean pre- and post-test scores were compared through the application of a t test for correlated samples.

Table 3 presents the results of the comparison of mean pre- and post-test English-language-proficiency scores for the total sample. The mean pre- to post-test gain of 0.64 T units was statistically significant ($t = 3.00$, $df = 122$, $p<.01$). Accordingly, the objective was met.

OBJECTIVE 3. MASTERY OF SOCIAL STUDIES CONCEPTS

An objective of this program was that in May, 1982, 80 percent of the program students would demonstrate mastery of 70 percent of the items on a program-developed test of social studies concepts. Table 4 presents a frequency distribution of scores on the social studies test. Of the 122 students for whom scores were obtained, 86.1 percent attained the 70-percent criterion. Thus, the program objective was met. The overall mean score was 73.8 percent with nearly one-third of the students scoring at least 80 percent.

OBJECTIVE 4. MASTERY OF SCIENCE CONCEPTS

An objective of the program was that by May, 1982, 80 percent of the students would demonstrate mastery of 70 percent of the items on a program-developed science test. Table 5 presents a frequency distribution of the science-test scores. Over 80 percent of the 122 students tested passed the 70-percent criterion; 24 students scored below 70 percent.

TABLE 3

Comparison of Pre-test and
Post-Test English Language Samples[a]
(N = 123)

Test Session	Mean	S.D.[b]	$\bar{D}$[c]	t
Pretest	5.95	2.50	0.64	2.19***
Posttest	6.59	1.97		

**$p<.01$

[a]Scored in T units.

[b]Standard deviation.

[c]Mean pre- to post-test gain.

•The sample of 123 students showed a statistically significant increase in mean T-unit scores of pre- and post-test English-language samples.

TABLE 4

Frequency Distribution of
Scores on Project-Developed
Social Studies Test

Score[a]	Number of Students	Relative Percent	Cumulative Percent
90-99	5	4.1	4.1
80-89	33	27.1	31.2
70-79	67	54.9	86.1
<70	17	13.9	100.0
	122		

[a]Percentage of items correct.

- More than 86 percent of the participating students scored 70 percent or better on the project-developed social studies test; the program objective was attained.

TABLE 5

Frequency Distribution of Scores on Project-Developed Science Test

Score[a]	Number of Students	Relative Percent	Cumulative Percent
90-99	7	5.7	5.7
80-89	39	32.0	37.7
70-79	52	42.6	80.3
<70	24	19.7	100.0
	122		

[a]Percentage of items correct.

•Over 80 percent of the students tested scored at least 70 percent on the project-developed science test; the objective was attained.

Accordingly, the objective was attained. The mean test score was 74 percent with 38 percent of the students scoring at least 80 percent.

OBJECTIVE 5. GROWTH IN ENGLISH READING

The fifth pupil objective of the Bronx Multidiscipline Program proposed that by June, 1982, 80 percent of the participating students would master at least four new objectives in English reading as measured by the Prescriptive Reading Inventory (P.R.I.). The P.R.I. is a criterion-referenced test consisting of items which measure specific skills in the areas of phonology, structural analysis, and comprehension. Baseline testing was performed in October, 1981, with posttesting completed in May, 1982.

Table 6 presents a frequency distribution of the number of reading objectives (skills) mastered by the target population. The number of new skills mastered ranged from a minimum of one to a maximum of six with a mean of 4.3, a median of 4.8, and a mode of four. The four-skill criterion was attained by 84.6 percent of the students, surpassing the goal of 80 percent. Accordingly, the objective was met.

OBJECTIVE 6. ATTITUDE TOWARD THE PROGRAM

Staff training and resource services were provided to the teachers of the classes served by the program. Staff training focused upon the individualization of instruction, parent involvement, resources, curriculum, and instructional materials and equipment. Staff development was designed to enhance the instructional skills of participating teachers, thereby improving the educational program for the target students. It was hypothesized that an effective program of staff development would

TABLE 6

Frequency Distribution of the Number of Reading Skills Mastered by Program Students[a]

Number of Skills Mastered	Number of Students	Relative Percent	Cumulative Percent
6	12	9.8	9.8
5	45	36.6	46.4
4	47	38.2	84.6
3	8	6.5	91.1
2	7	5.7	96.8
1	4	3.3	100.1[b]
	123		

[a]Measured by the Prescriptive Reading Inventory

[b]Does not sum to 100 percent due to rounding error.

oOver 84 percent of the students mastered at least four new reading skills; the criterion was 80 percent. Thus, the English-reading objective was attained.

result in a positive teacher attitude toward the program as manifested in responses to an appropriate questionnaire. Accordingly, an objective of the program was that 100 percent of the participating teachers would report favorable attitudes toward the program as measured by a locally-developed questionnaire.

A five-point Likert-type scale was developed consisting of six items that measured the staff perceptions of program services. The scale was administered to ten program teachers during May, 1982. Analysis of these data revealed that all ten teachers either strongly agreed or agreed that program training, materials, and staff were instrumental in providing an effective program. Accordingly, the objective was attained.

OBJECTIVE 7. STAFF MASTERY OF WORKSHOP CONCEPTS

In addition to assessing the impact of staff development through the measurement of teacher attitudes, evidence of the mastery and use of skills promoted at staff workshops was obtained through classroom observations by the program coordinator.

The program objective addressed in this phase of the evaluation proposed that 100 percent of the participating teachers would demonstrate mastery of 75 percent of the skills and concepts focused upon in workshops.

Eleven teachers were observed with the results recorded on separate observation records. The teacher observation record consisted of 13 items covering individualization of instruction, classroom management, use of project materials and curricula, and communication with parents.

Each item was given a percentage rating from 10 to 100 indicating the level of skill demonstrated by the teacher observed. To measure the

objective, the observation records were used as criterion-referenced tests with each item considered a performance objective; a criterion of 70 percent was established for mastery of each objective.

Eleven teachers were observed and scored on the appropriate observation record. Analysis of these data indicated that all of the observed staff demonstrated mastery (i.e., a rating of at least 70 percent) on every item (i.e., objective). On 12 of the 13 items all teachers were rated 80 percent or higher; on the remaining item seven teachers were rated 80 percent or higher and four were rated 70 percent.

OBJECTIVE 8 and 9. PARENT INVOLVEMENT

The program's parent involvement objectives proposed the following:

--50 percent of the parents who attend one parent workshop would attend at least one more; and

--70 percent of the parents attending workshops would demonstrate mastery of 75 percent of concepts presented.

Program staff developed a series of monthly parent workshops as the princpal vehicle for parent involvement. (See Chapter II for further description of parent-involvement activities.) Each session was attended by from four to nine parents; average attendance was 5.8. A total of 28 parents attended workshop sessions; of these 11 (39.2 percent) attended two or more and 17 (60.8 percent) attended only one. Accordingly, objective 8 was not achieved.

Program staff used various criteria to determine whether workshop concepts were mastered by participating parents including: successful completion of projects, demonstrated ability to fill out English-language forms and applications, increasing ability to understand spoken English,

or reports of having successfully applied consumer education or hygiene concepts. According to program records, 90 percent of the participating parents successfully mastered all concepts taught in the cooking, consumer education, hygiene, crafts, and sewing activities and about 75 percent overall showed satisfactory mastery of English as a second language. Accordingly, objective 9 was attained.

IV. CONCLUSIONS AND RECOMMENDATIONS

The analyses of data from pupil achievement measures, teacher attitude and observation scales, and staff interviews and classroom observations by an O.E.E. consultant indicated that, as reported in previous cycles, the Bronx Multidiscipline Special Education Bilingual Program continued to provide an effective and comprehensive system of educational services that benefited bilingual handicapped students in the Bronx through direct instruction and staff development and support.

Specifically, pupil achievement data indicated that almost all student program objectives were again attained. That is, the proposed criteria were met in oral-English proficiency, social studies, science, and English reading. Although the proposed objective in mathematics was not attained, students showed considerable achievement. In addition, all classroom teachers manifested a positive attitude toward program services, particularly teacher training, and demonstrated proficiency in the skills and concepts focussed upon in teacher-training workshops. Extensive program-parent communication was maintained through home visits by the project coordinator, teachers, and paraprofessionals and there was sufficient attendance at parent workshops to hold monthly sessions through the year. Although attendance was modest, parents who participated were enthusiastic and successfully mastered the concepts presented.

Observations and interviews revealed that all aspects of the program were effectively implemented as proposed. Although the population

exhibited a wide range of cognitive and academic levels, program staff effectively assisted and trained the classroom teachers in the individualization of instruction to meet the heterogeneity of pupil needs. In every case the students appeared to be highly motivated and showed a positive attitude toward learning. Undoubtedly, training and assistance in diagnostic-prescriptive methods, grounded in appropriate curriculum objectives and activities, contributed to the well-managed classroom atmosphere. Successful learning was evident in spite of the wide range of intellectual skills.

In addition, the program effectively drew upon a number of resources such as agencies involved in bilingual education. Classrooms were provided with the essential equipment needed to conduct a variety of motivating learning activities.

If this program model is replicated in the future the following recommendations are offered for its continued success:

- Maintain the multiple focus of the program, i.e. student achievement, staff development, and parent involvement.
- Staff development should continue to focus upon the diagnostic-prescriptive approach to the individualization of instruction using methods such as the Workshop Way.
- The development of bilingual special education curricula and instructional materials ought to continue, especially in reading and mathematics.
- Continue exemplary efforts to involve parents of participating students.